REMARKS/ARGUMENTS

Re-examination and favorable reconsideration in light of the following comments are respectfully requested.

Claims 2 - 10, 12 - 16, 18, and 20 - 32 are pending in the application. Currently, claims 2 - 10, 12 - 16, 18, 20 - 22, and 29 - 32 stand rejected; and claims 23 - 28 have been withdrawn from consideration as being directed to a non-elected invention.

In the office action mailed February 7, 2007, claims 2 - 6, 14, 15, 18, 20 - 22, and 29 - 32 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,156,146 to Cundiff in view of CMT Materials and further in view of U.S. Patent Publication No. 2005/0095380 to Watkins and further in view of 3M Corporation (Structural Core Splice Adhesive Film AF 3028) and further in view of U.S. Patent No. 4,687,691 to Kay; claims 7 - 10, 12, and 13 were rejected under 35 U.S.C. 103(a) as being unpatentable over Cundiff in view of ordinary skill in the art; and claim 16 was rejected under 35 U.S.C. 103(a) as being unpatentable over Cundiff.

The foregoing rejections are traversed by the instant response.

The present invention broadly relates to a self extinguishing composite primary structure comprising a core formed from an open cell and a thermal insulating material, which core comprises a plurality of honeycomb cells filled with a fire resisting material such as a fiberglass material and has a first surface and a second surface. At least one ply of a structural graphite prepreg material bonded to each of the first and second surfaces. Each ply is bonded to each of the first and second surfaces by an epoxy structural film adhesive.

The present invention also broadly relates to a helicopter comprising at least one component formed from a self extinguishing composite material. The self extinguishing composite material comprises a core formed from a fire resisting material, which core

comprises a plurality of honeycomb cells filled solely with the fire resisting material such as fiberglass material. The core has a first surface and a second surface, and at least one ply of a structural graphite prepreg material bonded to each of the first surface and the second surface.

As noted above, claims 2 - 6, 14, 15, 18, 20 - 22, and 29 - 32 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Cundiff in view of CMT Materials and further in view of Watkins, 3M Corporation, and Kay. The rejection fails for a number of reasons.

Obviousness is a question of law based on findings of underlying facts relating to the prior art, the skill of the artisan, and objective considerations. See *Graham v. John Deere Co.*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966). To establish a *prima facie* case of obviousness based on a combination of the content of various references, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. See *KSR International Co. v. Teleflex, Inc.*, 550 U.S. _____ (2007); also see *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006). Obviousness can not be established by hindsight combination to produce the claimed invention. See *In re Gorman*, 933 F.2d 982, 986, 18 USPQ2d 1885, 1888 (Fed .Cir. 1991). As discussed in *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1143, 227 USPQ 543, 551 (Fed .Cir. 1985), it is the prior art itself, and not the applicants' achievement that must establish the obviousness of the combination. Obviousness also may not be established by demonstrating that each element was independently known in the art. *KSR, 550 U.S. at* _____. There must still be a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does. *Id.* There is no question that the rejection of record is a pure hindsight rejection. The manner in which the Examiner selects

particular pieces from the different pieces of prior art to arrive at the claimed subject matter clearly demonstrates the hindsight nature of the rejection. There is nothing in the record which can be construed to be an articulated reasoning with a rational underpinning which supports the legal conclusion of obviousness. Thus, the Examiner has not met the burden of establishing a *prima facie* case of obviousness.

Claim 2 calls for the core to comprise a plurality of honeycomb cells filled with a fiberglass material. The Cundiff patent relates to a layered product having a honeycomb core having cells filled with a foam material. Each cell has a first layer of an uncured, heat expandable, foamable material and a second layer of an uncured, heat expandable, foamable material within the cell. In a preferred embodiment, the material forming the heat expandable foam material is SYNSPND X9899 from Dexter Aerospace. It should be noted that nowhere does Cundiff indicate that he is interested in forming a self extinguishing composite primary structure for use on a helicopter. This is a point not addressed by the Examiner in the rejection but central to the obviousness of the claimed subject matter. Clearly, Cundiff does not meet the limitations of a core comprising a plurality of honeycomb cells filled with a fiberglass material and the claimed epoxy structural film adhesive.

The Examiner cites CMT materials as showing supplying syntactic and solid polymer material for plug assist thermoforming since at least November 25, 2002. However, nowhere in this reference is there a description of the composition of the CMT Materials syntactic foam or a suggestion that would lead one of ordinary skill in the art to incorporate the CMT material syntactic foam into a self extinguishing composite primary structure such as that set forth in claim 2. Certainly, there is nothing in the CMT materials which would suggest that one should use syntactic foam to form a

self extinguishing composite primary structure for a helicopter. Clearly, the CMT Materials article is non-analogous art. It does not relate to anything which forms the claimed invention.

As for the modification of syntactic foams to add large diameter fiberglass macrospheres as indicated in the Wikipedia definition, there is no evidence that the CMT materials contained such materials for their applications. Further, the Wikipedia article only has an effective date of June 24, 2006 and thus is not available as prior art. It is not even evidence under the law. In conclusion, the CMT Materials article and the Wikipedia articles are irrelevant to the claimed invention and would not render obvious the claimed composite material structure.

With regard to the Watkins et al. publication, there are several problems. The Watkins et al. publication is from non-analogous art. The invention in Watkins et al. relates to an insulated subsea pipe which has a plurality of concentric plastic tubes over a steel flowline pipe. There is nothing in this publication which bears any relationship to the inclusion of fiberglass macrospheres in a syntactic foam to be used in a self extinguishing composite material. Further, there is nothing in the Watkins et al. publication which would teach one how to form a self extinguishing composite primary structure for use in a helicopter.

Even if Watkins et al. were somehow properly combinable with Cundiff, it still would not meet the limitation of the core comprising a plurality of honeycomb cells filled with a fiberglass material. The only thing the honeycomb cells will be filled with is a syntactic foam. It should not be lost on the Examiner that none of the references teaches or suggests how to form a self extinguishing composite primary structure. It is believed that the syntactic foams cited in these references, these materials, with or

without fiberglass macrospheres, will burn. The Examiner has not provided any evidence to the contrary.

As for the 3M publication, the mere fact that something may exist in the prior art is not sufficient to establish a case of obviousness. Applicants find nothing in this reference which would motivate one of ordinary skill in the art to use a 350 degree Fahrenheit curing epoxy structural film adhesive to join each ply to the first and second surfaces of the claimed core.

With regard to the Kay reference, it does not cure the aforenoted deficiencies of the other references. While Kay may teach the use of composite parts in helicopters, the composite is not that being claimed in the claim 2.

For the foregoing reasons, the Examiner has failed to make a *prima facie* obviousness rejection of claim 2.

Claim 3 is allowable for the same reasons as claim 2 and further because the Examiner has not shown a core comprising a plurality of honeycomb cells filled solely with a fire retardant material.

Claim 4 is allowable because none of the cited and applied references teach or suggest providing a core having honeycomb cells filled solely with a fiberglass material.

Claim 5 is allowable for the same reasons as claim 2 as well as on its own accord.

Claim 6 is allowable for the same reasons as claim 2 and further because none of the cited and applied references teaches or suggests a core having a plurality of honeycomb cells filled solely with a fiberglass material.

Claim 14 is allowable for the same reasons as claim 6 as well as on its own accord.

Claim 15 is allowable because none of the cited and applied references teaches or suggests the use of a 350 degree Fahrenheit

curing epoxy structural film adhesive in the claimed composite structure.

Claim 18 is allowable for the same reasons as claim 6 as well as on its own accord.

Claim 20 is allowable for the same reasons as claim 3 and further because none of the cited and applied references teaches or suggests the use of a 350 degree Fahrenheit curing epoxy structural film adhesive in the claimed composite structure.

Claim 21 is allowable because none of the cited and applied references teaches or suggests forming the claimed component(s) from the claimed self extinguishing composite material.

Claim 22 is allowable for the same reasons as claim 6 and further because none of the cited and applied references teaches or suggests forming the claimed components out of the claimed self extinguishing composite structure.

Claim 29 relates to a helicopter comprising means for increasing crew and passenger safety, which crew and passenger safety increasing means comprising means for resisting fire forming each of a portion of a cockpit section of the helicopter, an upper cabin door, a lower cabin door, at least one emergency egress hatch, and an upper door in a transition section, and each fire resisting means forming the portion of the cockpit section of the helicopter, the upper cabin door, the lower cabin door, the at least one emergency egress hatch, and the upper door in the transition section comprising an outer skin panel having core means for self extinguishing in event of a fire, means for forming an exterior structural surface and an interior structural surface, and means for bonding the structural surfaces forming means to the core means. None of the cited and applied references teach or suggest such a helicopter having the claimed fire resisting means in the claimed portions of the helicopter.

Claims 30 - 32 are allowable for the same reasons as claim 29 as well as on their own accord. None of the cited and applied references teaches or suggests the claimed materials set forth in these claims.

With respect to the rejection of claims 7 - 10, 12, and 13 on obviousness grounds, the Examiner has failed to make out a *prima facie* case of obviousness. The Examiner has not set forth anything which would teach or suggest making the claimed components out of the claimed self extinguishing composite material. While the various components may be known in the art, this is an insufficient basis to establish obviousness even with the Examiner taking Official Notice. A clear deficiency of this rejection is that the Examiner merely makes the conclusory statement that the claimed invention is obvious. The Examiner has not articulated any technical reasoning with some rational underpinning to support the legal conclusion of obviousness. The Examiner's comments about Kay are duly noted; however, the Examiner relies on the false premise that the claimed material is a known material. As clearly demonstrated by the Examiner's effort to combine references in an arbitrary and capricious manner, the claimed material used for the claimed components is hardly a known material. The argument about rearranging the parts of an invention is not understood. Applicant is not rearranging any parts. The claimed invention is directed to new, useful, and unobvious parts.

With respect to the rejection of claim 16, this rejection fails because the Examiner has not set forth any reference which teaches or suggests the claimed construction. Further, the Examiner has failed to articulate any reason to support the legal conclusion of obviousness. The rejection is merely an unsupported conclusory statement on the part of the Examiner.

The Examiner's comment in paragraph 2 is noted and is wrong. The rejection may not be based on any hindsight. The rejection must flow from the prior art and that which is known in the prior art. It is clear from the rejection itself that the Examiner has merely found elements of the claimed invention in the prior art and attempts to fashion them together to arrive at the claimed invention. This is exactly what is prohibited as a hindsight rejection. The Examiner is using Applicant's disclosure as a blueprint for making the claimed invention, when the blueprint has to come from the prior art. Not a single reference talks about forming any portion of a helicopter from a self extinguishing composite primary structure. This fact alone should tell the Examiner that the claimed invention is not obvious.

With regard to paragraph 2 on page 2 of the office action, the motivation to combine the references does not come from the knowledge generally available to one of ordinary skill in the art. It can't because none of the cited and applied references has anything to do with the claimed invention.

With respect to the Examiner's comments on pages 2 and 3 of the office action, Applicants submit that the Examiner has not set forth any basis why the CMT materials would be reasonably pertinent to the particular problem with which applicant was concerned. Applicant is concerned with decreasing the risk of fire on a helicopter. There is no explanation from the Examiner as to how the CMT materials are reasonably pertinent to this problem.

With regard to paragraph 4 on page 3 of the office action, it is submitted that the Wikpedia materials are not available at all for any purpose. The Examiner should use the CMT materials from November 25, 2002 if that is what the Examiner is doing.

For the foregoing reasons, the instant application is believed to be in condition for allowance. Such allowance is respectfully requested.

Should the Examiner believe an additional amendment is needed to place the case in condition for allowance, he is hereby invited to contact Applicants' attorney at the telephone number listed below.

A notice of appeal and a one month extension of time request are appended hereto along with a check in the amount of $620.00 to cover the notice of appeal and extension of time fees. Should the Director determine that an additional fee is due, he is hereby authorized to charge said fee to Deposit Account No. 02-0184.

Respectfully submitted,

Edward J. Fabian et al.

By _____

Barry L. Kelmachter
BACHMAN & LaPOINTE, P.C.
Reg. No. 29,999
Attorney for Applicants

Telephone: (203)777-6628 ext. 112
Telefax: (203)865-0297
Email: docket@bachlap.com

Date: June 7, 2007

I, Karen M. Gill, hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313" on **June 7, 2007**.

_____